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ONTARIO
DEPARTMENT OF EDUCATION

LIST OF APPARATUS

For the Course in Physics of the Middle Schools of
the High and Continuation Schools

*The pieces marked with an asterisk should form part of the sets for pupils' use
in groups of two or four.*

MECHANICS AND HYDROSTATICS

	Probable Limit of Cost.	
	Min.	Max.
* 2 Thistle Tubes	\$ 0 05	\$ 0 06
* 1 Metric Scale, one foot long. The ordinary School rulers graduated in inches and centimetres will answer	05—	10
* 1 Meter Stick	30—	35
* 1 Calipers, Simple form	25—	28
1 Dissected Litre Block	1 50—	2 00
* 1 Pinch-Cock		10
* 1 Burette, Mohr's, 50 C.C. graduated in tenths		1 50
* 1 Measuring Cylinder, 100 C.C. graduated	50—	60
* 3 Beakers, different sizes, lot	30—	33
* 1 Pendulum Bob	20—	25
* 1 Physical Balance, with set of Metric Weights	6 00—	15 00
* 1 Spirit Lamp or Bunsen Burner	25—	50
* 3 Spring Balance, graduated ounces and grains, each	60—	90
* 1 Glass Battery Jar, 6 in. deep, 8 in. diam.		35
* 1 Mortar and Pestle	20—	25
* 1 Pair Single Pulleys	25—	50
1 Pair Double Pulleys	45—	50
1 Wheel and Axle (Wood)	1 15—	1 50
1 Inclined Plane and Car	3 75—	4 80
1 Vernier Calipers (optional)	1 75—	5 00
1 Micrometer Wire Gauge (optional)	3 00—	5 00

		Probable Limit of Cost.	
		Min.	Max.
1	Air Pump and Receiver	\$10 00—	\$30 00
1	Elastic Rubber Balloon. A toy balloon answers well	08—	09
1	Transmission of Pressure Apparatus		1 75
1	Archimedes Principle	1 45—	1 50
1	Globe for weighing Air		3 00
1	Barometer Tube, heavy glass		35
1	Mariotte's Law Tube	70—	75
1	Lift Pump, Glass Model	1 25—	1 30
1	Force Pump, Glass Model	1 25—	1 50
1	Hydraulic Press, Glass Model		1 50
1	Filter Funnel	08—	10
* 1	Retort Stand (two rings)	40—	50
* 3	Small Florence Flasks with perforated rubber corks to fit	10—	40
* 1	Florence Flask with wide mouth	10—	13
* 1	Rubber Cork with two holes to fit Florence Flask with large mouth	08—	12
* 1	Hydrometer Jar		40
* 1	Porous Cup	15—	20
* 1	Specific Gravity Bottle	60—	1 35
* 1	Weighted Wooden Prism, 1 square centimeter in section	10—	20
1	Hydrometer for Heavy Liquids	45—	75
1	Hydrometer for Light Liquids	45—	75
1	Aneroid Barometer	5 00—	10 00
* 1	Set Capillary Tubes	75—	85
1	Baroscope	2 00—	3 00

SOUND

1	Brass Rod for showing the production of Sound by longitudinal vibrations of rods	25—	1 30
1	Whistle		10
1	Coil Spring, about 1 inch in diameter and 2 feet long. .		20
1	Bell in Vacuo	1 80—	2 50
1	Whirling machine		5 00
1	Toothed Wheel with ring of holes to attach to Whirling Machine to illustrate Pitch and Sound	4 00—	5 00
1	Clamp for Vibrating Plates	1 25—	2 50
2	Brass Plates, one square, one circular	1 00—	2 50
1	Sonometer	5 00—	10 00
1	Violin Bow	75—	1 50
* 1	Tuning Fork-A	20—	25
2	Tuning Forks-C, mounted on Resonance Boxes, each. . .	3 00—	8 00
2	Large Concave Mirrors for Reflection of Sound, each ...	2 00—	3 00
1	Interference Apparatus		5 00
1	Siren (optional)	5 00—	30 00
Glass Tubes of various sizes and lengths for showing Vibra- tions of Air Columns		75—	1 50
1	Organ Pipe with Glass Front		2 50
1	Tambourine to use with the above	25—	50

	Probable Limit of Cost.	
	Min.	Max.
1 Manometric Flame Apparatus	\$ 5 00—	\$10 00
2 Troughs for showing that waves travel faster in deep than in shallow water	1 50—	3 00
1 Kundt's Tube for finding velocity of sound in a solid (optional)	3 75—	5 00

HEAT

1 Ball and Ring	1 00—	1 25
1 Compound Bar	40—	50
* 1 Thermometer, graduated in both Centigrade and Fah- renheit Degrees		70
1 Differential Thermometer	1 50—	3 50
* 1 Calorimeter	1 50—	2 00
1 Fire Syringe	1 50—	2 00
1 Apparatus for determining the coefficient of linear expan- sion in a metal	2 25—	5 00
* 1 Apparatus for Testing "Boiling Point" in a Ther- mometer		1 50
1 Maximum Thermometer	2 00—	6 00
1 Minimum Thermometer	2 00—	5 40
1 Hope's Apparatus for Showing Maximum Density of Water	4 00—	4 50
1 Regnault's Apparatus for Finding Coefficient of Expan- sion of a Gas (optional)	1 50—	7 00
* 1 Dew Point Instrument	1 50—	2 50
1 Wet-and-Dry Bulb Hygrometer	2 50—	6 00
1 Distillation Apparatus	1 00—	2 00
1 Cryophorus	1 00—	1 50
1 Model of Steam Engine	3 00—	10 00
1 Edser's Apparatus for Finding the Relative Conducting Powers of Metals	2 25—	2 50
1 Model Davy Safety Lamp	2 50—	3 00
1 Apparatus for Showing Principle of Ventilation	1 25—	1 50

LIGHT

* 1 Cardboard Screen with Frame		0 50
* 1 Plane Rectangular Glass Tank, to be used also as Pneumatic Trough	2 50—	3 50
* 1 Plane Mirror, Mounted in Frame with Supports to Stand Vertically on the Table		3 00
1 Port Lumiere	10 00—	25 00
or Projection Lantern	15 00—	200 00
* 1 Optical Bench and Photometer, complete with Concave and Convex Mirrors and Set of Demonstration Lenses	5 50—	20 00
1 Optical Disc and Refraction Tank		17 50
1 Refraction Tank		3 50
1 Rotating Mirror, mounted on stand	2 50—	4 00
* 2 60° Glass Prisms	70—	2 00
1 Focusing Lens, large, mounted on stand	3 00—	4 00
1 Colour Wheel for re-Composition of Light		1 50
1 Direct Vision Spectroscope	6 00—	25 00
1 Telescope (optional)		5 00

ELECTRICITY AND MAGNETISM

		Probable Limit of Co	
		Min.	Max.
* 2	Bar Magnets	\$ 0 25—	\$ 0 50
1	Horse Shoe Magnet	10—	20
* 1	Compass		20
* 1	Bar Soft Iron (round, 6 inches long)	10—	15
* 1	Sheet Zinc and Sheet Copper (Pair Elements)		15
* 1	Galvanoscope, complete	75—	2 50
4	Dry Cells	25—	30
1	Spool Double Covered Magnet Wire, No. 20, to be used for making Electro-Magnets, etc		20
4	Small Incandescent Lamps (3 volts), each		40
1	Dipping Needle	3 00—	20 00
* 2	Insulating Stands, for suspending pith balls, etc.	25—	1 00
2	Spherical Metallic Condensers on insulation stands....		2 50
2	Hollow Hemispherical Condensers, with insulating handles to fit over spherical condenser		2 50
1	Cylindrical Metallic Condenser on insulating stand ...		2 50
* 1	Glass Rod and 1 Ebonite Rod, for experiments in elec- trification	35—	75
1	Wimshurst Electrical Machine (optional)		25 00
* 1	Gold Leaf Electroscope (fitted as a condensing electro- scope)	50—	10 00
2	Leyden Jars		3 00
1	Discharger for Leyden Jar		2 00
*	Strips of Zinc, Copper, Carbon, Iron, Lead and Platinum to be used in constructing the various forms of cells..	50—	2 00
* 1	Daniell Cell	50—	75
1	Leclanché Cell	50—	60
* 1	Water Voltameter	2 00—	2 75
1	Copper Voltameter	1 50—	4 50
* 1	U-Shaped Tube on stand	1 00—	1 50
2	Coils with Mercury Commutator, for showing Laws of Currents, complete	1 00—	3 50
1	Set of Telegraph Instruments	2 50—	5 00
1	Electric Bell	50—	1 00
1	Astatic Pair of Magnetic Needles	75—	1 75
1	Astatic or D'Arsonval Galvanometer	5 00—	10 00
1	Tangent Galvanometer	3 50—	10 00
1	Ammeter	3 00—	10 00
1	Voltmeter	3 00—	10 00
1	Set of Coils for demonstrating the laws of current in- duction		3 00
1	Dynamo and Motor, showing parts and connections..	12 00—	30 00
1	Arc Lamp, Simple Regulator	3 00—	3 30
1	Wheatstone Bridge	5 00—	25 00
	Instead of the above a Meter Sliding Bridge may be used	2 50—	15 00
1	Induction Coil	3 00—	25 00
1	Set Telephone Instruments	4 00—	10 00
1	Set Wireless Telegraphy Instruments (simple form)..		15 00
1	X-Ray Tube		5 00